

II. REMARKS

As set forth in the Final Office Action, the examiner rejected claims 1-2 and 8-14 under 35 U.S.C. 103(a) as being unpatentable over Kleijn et al. (US 6,223,151) in view of Griffin (IEEE Transactions on Acoustics, Speech, and Signal Processing, Vol. 36, No. 8, August 1988, pages 1223-1235; Griffin: Multiband Excitation Vocoder). Furthermore, claims 3-5, 7 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleijn et al. in view of Griffin, and further in view of Kleijn (US 5,517,595). Also, claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kleijn et al. (US 6,223,151) in view of Donovan et al. (US 6,266,637). The Office Action is thus identical to the previous Office Action (dated April 20, 2004) with the only difference being the addition of Griffin concerning claims 1, 8, 12 and 15.

The corrected Advisory Action stated that the argument presented in the response to the Final Rejection does not overcome the rejections based on prior art.

The following additional analysis and argument are presented to amplify the argument of the previous response, thereby to emphasize the distinction between the practice of the present invention, as claimed, and the teachings of the cited art. This argument is believed to overcome the foregoing rejections, and to show the presence of patentable subject matter in the present claims.

It is intended to conduct an interview by telephone with the examiner based on the following argument. The claims have not

been amended further because the limitations already present in the claims are believed to support the present argument.

The Griffin reference teaches only that the pitch period is estimated. That can be seen for example in Figure 3 where one step according to Griffin is to "refine initial pitch period". The core of claim 1 of the present application is the step "modifying the formulated signal using the periodicity estimate such that the periodicity is improved". This means that the signal itself is modified and thus, the pitch period is changed, and therefore, the purpose of the present invention is not to find out a better pitch period estimate.

The Griffin teaching is different from that of the present invention wherein, as noted above, the signal itself is modified with a resulting change in the pitch period. In section III-A of the Griffin, which the Examiner refers to, a pitch refinement is explained. At first, a relatively simple method is used for achieving a first estimate of the pitch period. After that, a second algorithm is used for making the pitch period estimate more accurate. The second algorithm is more complex than the first simple method. The accurate pitch period estimate is made for each harmonic component which leads to the fact that a good voicing estimate can be done for each harmonic component in the teaching of Griffin. Thus, the present invention according to the application differs significantly from Griffin.

Concerning the Kleijn et al. reference (US 6,223,151), the applicant respectfully states the following. The modifications are made on the linear-prediction residual of the speech signal in Kleijn et al. The modifications include sample skipping and repetition, and additionally, changing the limit values of the

inspection period of the speech signal (namely, modifying the cycle, not the signal). However, a cycle can be removed or repeated. This is still different than changing the pitch period. In Kleijn et al., the pitch period is estimated and an attempt is made to center the pitch pulse in the middle of a cycle. This differs also from the present invention.

The foregoing operation of Kleijn et al., wherein there is a changing of the limit values of the inspection period of the speech signal, in combination with the operation of Griffin, wherein a two step process is used for making the pitch period estimate more accurate, do not suggest the step of present claim 1 that calls for modifying the formulated signal using the periodicity estimate such that the periodicity is improved. It appears that Griffin is employed by the examiner to show that the two additional steps added by prior amendment ("determining at least one voicing. . . ." and "deciding the encoding. . . .") involve process steps that are known already in the prior art. However, there would be no motivation to combine these two references since the end product differs from the present invention.


Furthermore, with respect to the teaching of Kleijn et al., wherein the examiner (top of page 3 of the Office Action) relies on the passage in Kleijn et al. in columns 7 and 8 to show a step of modifying a formulated signal using a periodicity estimate, it is observed that the cited passage describes a number of mathematical processes performed for analyzing the signal, but provides no teaching of manipulating a signal to accomplish a "modifying of a signal". Therefore, Kleijn et al. considered individually or in combination with Griffin fails to show or suggest an important step of the present invention.

Accordingly, the examiner is requested to reconsider the foregoing grounds of rejection under 35 U.S.C. 103, and find allowable subject matter in the claims.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

Please charge the amount of \$1,020.00 for a 3 month extension of time. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,


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